



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,080	07/15/2003	Ofir Zohar	ASSIA 20.502	7108
26304	7590	11/27/2007	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP			VIDWAN, JASJIT S	
575 MADISON AVENUE			ART UNIT	
NEW YORK, NY 10022-2585			PAPER NUMBER	
			2182	
			MAIL DATE	
			DELIVERY MODE	
			11/27/2007	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/620,080
Filing Date: July 15, 2003
Appellant(s): ZOHAR ET AL.

MAILED

NOV 27 2007

Technology Center 2100

Brian E. Hennessey (Reg. No. 51,271)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/14/07 appealing from the Office
action mailed 10/31/06

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,615,352

Jacobson et al.

3-1997

Karger et al "Consistent Hashing and Random Trees: Distributed Caching Protocols for Relieving Hot Spots on the World Wide Web" Proceedings of the 29th ACM Symposium on Theory of Computing, Pg 654-663

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2, 5-10, 23-24 and 27-32 are rejected under 35 U.S.C. 102 (b). Claims 3,4,25 and 26 are rejected under 35 U.S.C. 103(a). The rejection is set forth in the final Office Action mailed 10/31/06.

(10) Response to Argument

Issue 1 (A & B – Claims 1 & 23):

1. Appellant argues that Jacobson patent fails to teach the limitation *"maintaining the same logical addresses for the logical addresses in the initial set of storage devices that are not transferred to the additional storage device."*

Examiners Response to Issue 1:

The underlying issue between the Appellant and the Examiner rests on a disagreement as to what transpires with respect to data in the initial set of storage drives (Drives that were previously available to the user) following an addition of a new storage disk to the system.

In the Advisory Action mailed on 02/05/2007, the Examiner had presented his position that the original logical addresses corresponding to the physical addresses of data in the original set remains unaltered because only the data stripes that need to be moved to the new disk are actually transferred and reconfigured to new logical addresses (Virtual Storage space addresses). The Examiner cited Jacobson Col. 2, Lines 9-25 as is included:

According to one method, the physical storage space of the disk array is configured into multiple stripes for storing a predetermined amount of data. The stripes extend across multiple storage disks in the disk array, and are made up of one or more equal sized segments from each storage disk in the disk array. *When more storage disks are added, data from one stripe is moved to a another portion of the physical storage space. The physical storage space containing the stripe is then reconfigured into an expanded stripe for storing data.* This expanded stripe spans across all storage disks, including the new additional storage disks. The expanded stripe is then ready to receive new data. This process is continued stripe-by-stripe until all stripes have been configured to include the new disks. While the stripe is being expanded, the data storage system does not allocate any virtual blocks within the selected stripe.

Appellant contests that the above citation of transfer of data as it relates to "another portion of the physical storage space" by no means is limited to only the new disks. More importantly, Appellant goes further to state that contrary to the Examiner's position, Jacobson's teachings in Figures 7 & 8 of the reference highlight a scenario wherein **"upon adding a new disk 4, data is moved from an initial position to a new position which is NOT in the newly added space, but rather is in initial space."** Therefore, Appellant concludes that the Examiner's interpretation of Jacobson's teaching is invalid.

The Examiner full-heartedly agrees with the Appellant's contention that Figures 7 & 8 provides teachings contrary to the Examiner's position. However, it should be noted that the Appellant is relying on a completely separate embodiment of Jacobson than the one relied upon by the Examiner to support his position. Discussion of Figures 7 – 13 in the Jacobson patent begins on Col. 13, Line 28. This discussion reads as follows:

FIGS. 7-13 show another preferred method according to this invention where segments are reorganized and packed within a stripe during the reconfiguration process. Unlike the method described above, data is initially moved within the selected stripe, and not to a new location outside of the selected stripe. Additionally, with this method, on-line reconfiguration can be conducted without reserving space on the existing storage array.

The above citation clearly distinguishes the two embodiments of Jacobson's system wherein the first method teaches the steps of selecting a stripe of data from an original storage and moving it directly to a "new location outside of the selected stripe" and wherein the second method as taught using Figs. 7-13 requires data to be initially moved within the selected stripe prior to being transferred to the newly added disk. *(For the sake of the record, please note that the Examiner at no point during the prosecution of this Application ever relied on teachings of the second embodiment).* Therefore in light of the above response, it is apparent that the Appellant's arguments as presented using Figures 7 & 8 for support are inapposite and thus the first embodiment of the Jacobson patent reads on the claimed invention.

Having established two separate embodiments as taught by Jacobson, the Examiner notes that even **if for the sake of an arbitrary argument** we were to use the second embodiment, Jacobson would still read on the claim limitation in question. Jacobson teaches dual view Virtual Storage space (see Fig. 4, elements "Application view" and "Raid View") that further point to the physical storage space (see Fig. 4, element 34) as it applies to disk drives in the storage set. Jacobson in Col. 9, Lines 28-46 teaches the migrating data within a set of storage drives wherein only the pointer (element 54) mapping the application level virtual storage space (50) to the RAID level virtual storage space is modified and updated to reflect the shift of data. The Examiner has provided simplified figures of Jacobson's system below as it applies to data migration to clearly illustrate how the logical addresses would remain the same for data stripes that were not moved to new drive (switching data set "0" and "1" from one disk to another within the same storage space)

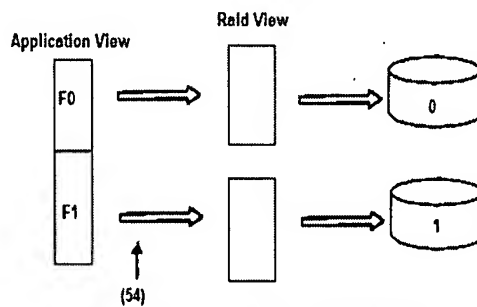


Figure. 1 - (representation of Jacobson's Fig. 4)

Figure 1 illustrates mapping of Virtual storage space and Physical storage space prior to any data migration where as the figure below (Fig. 2) illustrates the mapped set following data switch as exemplified.

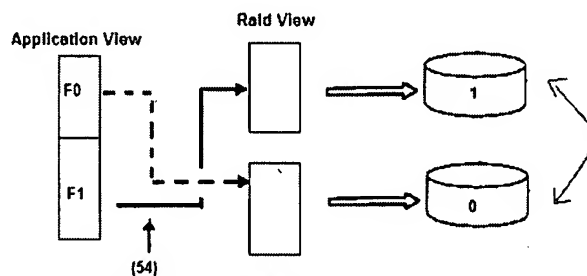


Figure. 2 - (representation of Jacobson's Fig. 4)

Therefore, even if we were to consider that the data is being moved within the initial set, it would be apparent that the logical addresses (Application level virtual storage address) remain constant for the set of data stripes that was not moved to the newly added storage drive.

Issue 2:

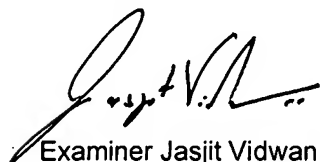
Applicant arguments with respect to dependent claims 3, 4, 25 and 26 are similar to those addressed above with indication that since Jacobson failed to teach the provided limitation, dependent claims are allowable for the same reasons as introduced for independent claims in Issue 1.

Examiners Response to Issue 2:

See response to Issue 1.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



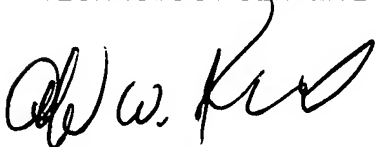
Examiner Jasjit Vidwan

Nov. 21st 2007

Conferees:



Lynne H. Browne
APPEAL PRACTICE SPECIALIST, TQAS
TECHNOLOGY CENTER 2100



Alford W. Kindred
Supervisory Patent Examiner (SPE)
Art Unit 2181